AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act as amended, (33 U.S.C. §§1251 et seq.; the "CWA"), and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§26-53),

Saint-Gobain Abrasives, Inc. and Saint-Gobain Ceramics & Plastics, Inc.
(formerly the "Norton Company")

is authorized to discharge from the facility located at

1 New Bond Street
P.O. Box 15008
Worcester, MA 01615-0008

to receiving water named **Weasel Brook** (Blackstone River Watershed)

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit will become effective 60 days after signature.

This permit and the authorization to discharge expire at midnight, on September 30, 2005.

This permit supersedes the permit issued on July 29, 1975.

This permit consists of 11 pages in Part I including effluent limitations, monitoring requirements; Attachment A, NPDES Outfalls; Attachment B, Acute Freshwater Toxicity Test Procedures and Protocol; and 35 pages in Part II including General Conditions and Definitions.

Signed this 18th day of December, 2003

/SIGNATURE ON FILE/

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Linda m. Murphy, Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA

Director
Division of Watershed Management
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

a. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge treated effluent from outfall serial number 001, non-contact cooling water (i.e., from air compressor units, hydraulic presses, and after-cooler compressors), steam condensate and storm water to Weasel Brook. The discharge will be limited and monitored by the permittee as specified below. Samples will be collected during dry weather conditions[*1], prior to discharging into Weasel Brook, at a point designated as Outfall 01A along this discharge drainage channel that includes all of the listed wastewaters except for storm water.

Effluent Characteristic	Units	Discharge Limitation			Monitoring Requirement	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Flow	GPD	130,000	—	Report	Daily*[2]	Estimate
Oil and Grease	mg/l	—	—	15	1/Quarter	Grab
Temperature *[4]	°F	—	—	83	2/Month	Grab
pH		(See Part I.A.f. on Page 8)			1/Month	Grab
dissolved oxygen		(See Part I.A.i. on Page 8)			1/Month *[10]	Grab
LC_{50} *[5, *7]	%	----	----	100	1/Year*[6]	24-Hour Composite*[3]

See pages 5 and 6 for footnotes.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

b. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge treated effluent from outfall serial number 003, hydraulic, process equipment, and air conditioning non-contact cooling water, steam condensate, storm water, and storm water via a coal pocket and a parking lot to Weasel Brook. The sampling location of the discharge from the storm water runoff via a coal pocket is located at the outlet of the total suspended solids removal system, and this location will be designated as Outfall 03B. Such discharge (Outfall 03B) will be sampled by the permittee prior to mixing with storm water or any other flows, and will include a total suspended solids limit and monitoring requirement as specified below. All other samples will be collected during dry weather conditions[*1], prior to discharging into Weasel Brook, at a point along this discharge drainage channel that includes all of the listed wastewaters except for storm water, and this location will be designated as Outfall 03A. Such discharge (Outfall 03A) will be limited and monitored by the permittee as specified below.

Effluent Characteristic	Units	Discharge Limitation			Monitoring Requirement	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Flow	GPD	130,000	—	Report	Daily*[2]	Estimate
TSS *[8]	mg/l	—	—	50 *[9]	1/Month	Grab
Oil and Grease	mg/l	—	—	15	1/Quarter	Grab
Temperature *[4]	°F	—	—	83	2/Month	Grab
pH		(See Part I.A.f. on Page 8)			1/Month	Grab
dissolved oxygen		(See Part I.A.i. on Page 8)			1/Month *[10]	Grab
LC_{50} *[5, *7]	%	----	----	100	1/Year*[6]	24-Hour Composite*[3]

See pages 5 and 6 for footnotes.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

c. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge treated effluent from outfall serial number 004, non-contact cooling water from air conditioning units to Weasel Brook. Such discharge will be limited and monitored by the permittee as specified below. Samples will be collected prior to discharging into Weasel Brook, at a point along this discharge drainage channel that includes the non-contact cooling water discharge.

Effluent Characteristic	Units	Discharge Limitation			Monitoring Requirement	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Flow	GPD	20,000	—	Report	Daily*[2]	Estimate
Oil and Grease	mg/l	—	—	15	1/Quarter	Grab
Temperature *[4]	°F	—	—	83	2/Month	Grab
pH		(See Part I.A.f. on Page 8)			1/Month	Grab
dissolved oxygen		(See Part I.A.i. on Page 8)			1/Month *[10]	Grab
LC_{50} *[5, *7]	%	----	----	100	1/Year*[6]	24-Hour Composite*[3]

See pages 5 and 6 for footnotes.

Footnotes:

*1. The average monthly flow limit does not include storm water. Dry weather is defined as "after at least 72 hours of no precipitation".

*2. Report the maximum, average, and total monthly flow rate, and any upset or non-compliance events.

*3. A 24-hour composite sample will consist of at least twenty four (24) grab samples taken during one working day (e.g., 7 am. Monday - 7 am. Tuesday).

*4. The permittee will collect instream temperature readings twice per month, with at least seven days between the sampling events, after the non-contact cooling water has been discharging for at least three (3) hours, and during a period when the non-contact cooling water is still discharging. A temperature reading will be collected upstream from outfall 001, and downstream from outfall 004 at the bridge located over the "Administration Building Pond", and these two temperature readings will be reported to EPA and the MADEP. The downstream temperature reading will not be greater than 2.8 ^{o}C (5 ^{o}F) above the upstream ambient temperature, and the discharge and receiving water temperature readings will be collected within the same one (1) hour period.

*5. The LC_{50} is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) will cause no more than a 50% mortality rate.

*6. The permittee will conduct acute toxicity tests once per year, and will test the daphnid, Ceriodaphnia dubia only. Toxicity test samples will be collected during the second week in July if the dry weather criteria is met. Otherwise, the samples will be collected during the month of July during dry weather. The test results will be submitted by the last day of the month following the completion of the test. The results are due August 30th. The tests must be performed in accordance with test procedures and protocols specified in **Attachment B** of this permit.

Test Dates: in	**Submit Results By:**	**Test Species:**	**Acute Limit: LC_{50}**
July	August 30th	Ceriodaphnia dubia (Daphnid) See Attachment B	100 %

After submitting four consecutive sets of whole effluent toxicity (WET) test results, all of which demonstrate compliance with the WET permit limits, the permittee may request a reduction in the required WET testing. The permittee is required to continue testing in accordance with the permit until notice is received by certified mail from the EPA that the WET testing requirements have been changed.

*7. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall follow procedures outlined in **Attachment B Section IV., DILUTION WATER** in order to obtain permission to use an alternate dilution water. In lieu of individual approvals for alternate dilution water required in **Attachment B**, EPA-New England has developed a Self-Implementing Alternative Dilution Water Guidance document (called "Guidance Document") which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. If this Guidance document is revoked, the permittee shall revert to obtaining approval as outlined in **Attachment B**. The "Guidance Document" has been sent to all permittees with their annual set of DMRs and Revised Updated Instructions for Completing EPA's Pre-Printed NPDES Discharge Monitoring Report (DMR) Form 3320-1 and is not intended as a direct attachment to this permit. Any modification or revocation to this "Guidance Document" will be transmitted to the permittee as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in **Attachment B**.

*8. The total suspended solids samples will be collected at the outlet of the total suspended solids removal system during wet weather, and this location will be designated as Outfall 03B. Wet weather is defined as a storm event with at least 0.1 inch of precipitation, providing the interval from the preceding measurable storm is at least 72 hours. The 72-hour storm interval is waived when the preceding measurable storm did not yield a measurable discharge, or if you are able to document that less than a 72-hour interval is representative for local storm events during the sampling period. The permittee will collect the grab sample within the first 30 minutes of the discharge. If it is not practicable to take the sample during the first 30 minutes, the permittee will sample during the first hour of discharge and describe why collecting a grab sample during the first 30 minutes was impracticable. The permittee will submit this information on or with the discharge monitoring report.

*9. The permittee will not dilute the coal pile runoff with storm water or other flows in order to meet this limitation. When the treatment facility is operated to treat the volume of coal pile runoff that is associated with a 10-year, 24-hour rainfall event, any untreated overflow of coal pile runoff from the treatment unit will not subject to the 50 mg/l total suspended solids limitation.

*10. The permittee will collect instream dissolved oxygen grab samples once per month. The "upstream" ambient dissolved oxygen sample will be collected at a point that is far enough upstream to ensure that it is not impacted by outfalls 001, 003 and 004, and three "downstream" dissolved oxygen samples will be collected at a point that is within 5 feet of the end of the pipes of outfalls 001, 003 and 004, or the closest accessible point, and these four dissolved oxygen sample results will be reported to EPA and the MADEP. The discharge and receiving water dissolved oxygen samples will be collected within the same thirty (30) minute period.

After submitting the required grab sample results over a period of one (1) year, all of which demonstrate compliance with water quality standards, the permittee may request a reduction in the required dissolved oxygen sampling. The permittee is required to continue testing in accordance with the permit until notice is received by certified mail from the EPA that the dissolved oxygen requirements have been changed.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

d. Storm water sampling

(1) The permittee will conduct wet weather sampling at the following location during the second and fourth year of the permit.

Outfall SW-1: Storm water runoff from the permittee's site

Effluent Parameter	Units	Discharge Limitation		Monitoring Requirement	
		Average Monthly	Maximum Daily	Measurement Frequency	Sample Type[*1]
pH	st. units	Report	—	1/Quarter	Grab
TSS	mg/l	Report	—	1/Quarter	Grab
Oil & Grease	mg/l	Report	—	1/Quarter	Grab
chromium, trivalent[*2,*3]	ug/l	Report	—	1/Quarter	Grab
aluminum[*2,*3]	ug/l	Report	—	1/Quarter	Grab
copper, total[*2,*3]	ug/l	Report	—	1/Quarter	Grab
lead, total[*2,*3]	ug/l	Report	—	1/Quarter	Grab
zinc, total[*2]	ug/l	Report	—	1/Quarter	Grab

Footnotes:

*1. Storm water runoff samples will be collected and analyzed in accordance with 40 CFR Part136 and EPA's NPDES Storm Water Sampling Guidance Document, EPA 833-B-92-001, July, 1992. All such samples will be collected from the discharge resulting from a representative storm event. A "representative storm" is defined as a "typical" storm for the area in terms of intensity, volume, and duration - roughly a storm not varying by more than 50 percent from the average rainfall volume and duration. The permittee will collect samples during the first 30 minutes of the discharge. If sampling within the first 30 minutes is not feasible, the grab sample may be taken within the first hour of the discharge and noted.

*2. After submitting four consecutive grab sample results, all of which demonstrate compliance with water quality standards, the permittee may request a reduction in the required metals testing. The permittee is required to continue testing in accordance with the permit until notice is received by certified mail from the EPA that the metals requirements have been changed.

*3. The samples will be analyzed using the EPA-approved Furnace Atomic Absorption analytical method, and if any results are at the minimum detection level (ML), or below, they will be reported as zero on the discharge monitoring report.

(2) The permittee will collect storm water samples from the following eight (8) locations during the first thirty (30) minutes of the discharge and perform a visual inspection of each sample, once per quarter, consistent with the approach described in the Multi-Sector General Storm Water Permit. If sampling within the first 30 minutes is not feasible, the grab sample may be taken within the first hour of the discharge and noted.

Outfall	Sampling Location
002	Prior to discharging into Weasel Brook
SW-1	Manhole on C Street outside of Building 503
SW-2	Catch basin in parking lot behind Building 503
SW-3	Catch basin behind Buildings 418, 419, 420
SW-4	Pipe Discharge at AB Pond
SW-5	Catch basin south of Building 115, next to the trash compactor
SW-6	Catch basin between Buildings 115 and 120
SW-7	Catch basin behind Buildings 108 (Crystar) and 112 (IB)

Effluent Parameter	Units	Discharge Limitation		Monitoring Requirement	
		Average Monthly	Maximum Daily	Measurement Frequency	Sample Type
Oil & Grease	mg/l	—	Visual Inspection and Report	1/Quarter	Grab
TSS	mg/l	—	Visual Inspection and Report	1/Quarter	Grab

Part I.A. (Continued)

e. The discharge will not cause a violation of the water quality standards of the receiving waters.

f. The pH of the effluent will not be less than 6.5 nor greater than 8.3 at any time, unless these values are exceeded due to natural causes.

g. The discharge will not cause objectionable discoloration of the receiving waters.

h. The effluent will contain neither a visible oil sheen, foam, nor floating solids at any time.

i. The dissolved oxygen of the effluent will not be less than 5.0 mg/l at any time, unless the instream ambient background conditions are lower.

2. All existing manufacturing, commercial, mining, and silvaculture dischargers must notify the Director as soon as they know or have reason to believe:

   a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels."

      (1) One hundred micrograms per liter (100 ug/l);

      (2) Two hundred micrograms per liter (200 ug/l for acrolein and acrylonitrile; five hundred micrgrams per liter (500 ug/l) for 2, 4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;

      (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR Part 122.21(g)(7); or

      (4) The level established by the Director in accordance with 40 C.F.R. Part 122.44(f).

   b. That activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels."

      (1) Five hundred micrograms per liter (500 ug/l);

      (2) One milligram per liter (mg/l) for antimony;

      (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR Part 122.21(g)(7).

      (4) The level established by the Director in accordance with 40 CFR Part 122.44(f).

   c. That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the permit application.

3. Adding chemicals, including cooling water additives, to any of the discharges at this facility is prohibited, unless the permittee minimizes the addition of such chemicals and if testing results demonstrate levels that are below EPA method detection limits in the discharge.

4. This permit may be modified, or revoked and reissued, on the basis of new information in accordance with 40 CFR §122.62.

5. Toxics Control

   a. The permittee will not discharge any pollutant or combination of pollutants in toxic amounts.

   b. Any toxic components of the effluent will not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may be

promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.

6. Numerical Effluent Limitations for Toxicants

EPA or the MADEP may use the results of the toxicity tests and chemical analysis conducted pursuant to this permit, as well as national water quality criteria developed pursuant to Section 304(a)(1) of the Clean Water Act (CWA), state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including but not limited to those pollutants listed in Appendix D of 40 CFR Part 122.

B. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from outfalls listed in **Attachment A** of this permit. Discharges of wastewater from any other point sources are not authorized by this permit and will be reported in accordance with Part II. Section D.1.e.(1) of the General Requirements of this permit (Twenty-four hour reporting).

C. STORM WATER POLLUTION PREVENTION PLAN

The permittee will develop a Storm Water Pollution Prevention Plan (SWPPP) within six (6) months, and implement within one (1) year, of the effective date of the permit. The goal of the SWPPP is to eliminate or reduce the potential for a discharge of pollutants through the storm water system. In the event the potential cannot be eliminated, the permittee should select Best Management Practices (BMPs) to reduce or eliminate the pollutant loading to the receiving water. The SWPPP requirements will direct the permittee to review the physical equipment, the operational procedures, and the operator training at the facility. The objective of this review is to protect waters of the United States by eliminating or minimizing the potential discharge of any pollutants.

Unless denied by the EPA or the MADEP, the SWPPP will be considered approved and will be implemented by the permittee no later than 60 days after its submittal. Thus, the SWPPP is as enforceable as any effluent limits in the permit.

D. MONITORING AND REPORTING

1. Reporting

Monitoring results obtained during each calendar month will be summarized and reported on Discharge Monitoring Report Form(s) postmarked no later than the15th day of the following month.

Signed and dated originals of these, and all other reports required herein, will be submitted to the Director and the State at the following addresses:

Environmental Protection Agency
Water Technical Unit (SEW)
P.O. Box 8127
Boston, Massachusetts 02114

The State Agency is:

Massachusetts Department of Environmental Protection
Central Regional Office
627 Main Street
Worcester, Massachusetts 01608

Signed and dated Discharge Monitoring Report Forms and toxicity test reports required by this permit will also be submitted to the State at:

Massachusetts Department of Environmental Protection
Division of Watershed Management
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

E. STATE PERMIT CONDITIONS

This Discharge Permit is issued jointly by the U. S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MADEP) under Federal and State law, respectively. As such, all the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the MADEP pursuant to M.G.L. Chap.21, §43.

Each Agency will have the independent right to enforce the terms and conditions of this Permit. Any modification, suspension or revocation of this Permit will be effective only with respect to the Agency taking such action, and will not affect the validity or status of this Permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this Permit is declared invalid, illegal or otherwise issued in violation of State law such permit will remain in full force and effect under Federal law as an NPDES Permit issued by the U.S. Environmental Protection Agency. In the event this Permit is declared invalid, illegal or otherwise issued in violation of Federal law, this Permit will remain in full force and effect under State law as a Permit issued by the Commonwealth of Massachusetts.